

CLAIMS

What is claimed is:

- 1 1. A method comprising:
2 transmitting a header over an air interface, at a first modulation rate; and
3 transmitting the consolidated payload over the air interface, at a second
4 modulation rate, wherein the consolidated payload includes multiple data units.
- 1 2. The method of claim 1, wherein the header includes an indication of the
2 second modulation rate that will be used to transmit the consolidated payload, and
3 wherein the header and the multiple data units form a portion of a single, self-
4 describing, protocol data unit.
- 1 3. The method of claim 1, wherein the header includes information that enables
2 a receiver to determine when an end of the consolidated payload will occur.
- 1 4. The method of claim 1, wherein the header includes information that enables
2 a receiver to determine when an end of each of the multiple data units will occur.
- 1 5. The method of claim 1, wherein the consolidated payload further includes
2 information that enables a receiver to determine when an end of each of the multiple
3 data units will occur.
- 1 6. The method of claim 5, wherein the information includes multiple delimiters
2 which include a delimiter for at least one of the multiple data units, wherein the
3 delimiter for a data unit includes an indication of a length of the data unit, and
4 wherein the delimiter is transmitted before the data unit at the second modulation
5 rate.

- 1 7. The method of claim 6, wherein the delimiter further includes a validation
2 field, which enables a receiver to determine whether the indication of the length is
3 received correctly.
- 1 8. The method of claim 1, wherein transmitting the consolidated payload
2 occurs within approximately one symbol width of an end of the header.
- 1 9. The method of claim 1, wherein the header is a physical device header, and
2 wherein at least one of the multiple data units include a service data unit that is
3 separately deliverable by a receiver.
- 1 10. The method of claim 1, wherein the first modulation rate is in a range of
2 approximately 6 to 12 megabits per second.
- 1 11. The method of claim 1, wherein the second modulation rate is in a range of
2 approximately 6 to 240 megabits per second.
- 1 12. A method comprising:
2 switching a transmitter to a first modulation rate;
3 transmitting a preamble over an air interface, at the first modulation rate,
4 wherein the preamble enables a receiver to synchronize;
5 transmitting a header over the air interface, at the first modulation rate;
6 switching to a second modulation rate; and
7 transmitting a consolidated payload over the air interface, at the second
8 modulation rate, wherein the consolidated payload includes multiple data units and
9 information indicating the lengths of the multiple data units.
- 1 13. The method of claim 12, wherein the header includes an indication of the
2 second modulation rate that will be used to transmit the consolidated payload.

1 14. The method of claim 12, wherein the information includes multiple
2 delimiters which include a delimiter for at least one of the multiple data units,
3 wherein the delimiter for a data unit includes an indication of a length of the data
4 unit, and wherein the delimiter is transmitted before the data unit at the second
5 modulation rate.

1 15. A method comprising:
2 switching a transmitter to a first modulation rate;
3 transmitting a preamble over an air interface, at the first modulation rate,
4 wherein the preamble enables a receiver to synchronize;
5 transmitting a header over the air interface, at the first modulation rate,
6 wherein the header includes information that enables the receiver to determine when
7 an end will occur of each of multiple data units within a consolidated payload;
8 switching to a second modulation rate; and
9 transmitting the consolidated payload over the air interface, at the second
10 modulation rate, wherein the consolidated payload includes the multiple data units.

1 16. The method of claim 15, wherein the header further includes an indication of
2 the second modulation rate that will be used to transmit the consolidated payload,
3 and wherein the header and the multiple data units form a portion of a single, self-
4 describing, protocol data unit.

1 17. The method of claim 15, wherein the header is a physical device header, and
2 wherein at least one of the multiple data units include a service data unit that is
3 separately deliverable by the receiver.

1 18. A method comprising:
2 receiving a header over an air interface, at a first modulation rate;
3 switching to a second modulation rate; and
4 receiving a consolidated payload, at the second modulation rate, wherein the
5 consolidated payload includes multiple data units.

- 1 19. The method of claim 18, , wherein the header includes an indication of the
2 second modulation rate at which the consolidated payload is modulated, and
3 wherein the header and the multiple data units form a portion of a single, self-
4 describing, protocol data unit.
- 1 20. The method of claim 18, wherein the header further includes information
2 indicating when an end of the consolidated payload will occur.
- 1 21. The method of claim 18, wherein the header further includes information
2 indicating when an end of each of the multiple data units will occur.
- 1 22. The method of claim 18, wherein the consolidated payload further includes
2 information indicating when an end of each of the multiple data units will occur.
- 1 23. The method of claim 22, wherein the information includes multiple
2 delimiters which include a delimiter for at least one of the multiple data units,
3 wherein the delimiter for a data unit includes an indication of a length of the data
4 unit, and wherein the delimiter is received before the data unit at the second
5 modulation rate.
- 1 24. The method of claim 23, wherein the delimiter further includes a validation
2 field, the method further comprising:
3 determining whether the delimiter is valid using information in the
4 validation field; and
5 if the delimiter is not valid, evaluating at least one delimiter-sized data
6 segment received in the consolidated payload to attempt to find another possible
7 delimiter.
- 1 25. The method of claim 18, further comprising determining whether an end of
2 the consolidated payload has been reached based on a measurement of symbol
3 energy.

1 26. The method of claim 18, further comprising determining that an end of the
2 consolidated payload has been reached when the consolidated payload has at least
3 reached a known length or duration.

1 27. The method of claim 18, wherein the header is a physical device header, and
2 at least some of the multiple data units are service data units that are separately
3 deliverable by a receiver.

1 28. The method of claim 18, wherein the first modulation rate is in a range of
2 approximately 6 to 12 megabits per second.

1 29. The method of claim 18, wherein the second modulation rate is in a range of
2 approximately 6 to 240 megabits per second.

1 30. An apparatus comprising:
2 a medium access control device, to provide multiple data units destined for a
3 receiver to a physical device; and
4 the physical device, coupled to the medium access control device, which is
5 operable to
6 transmit a header over an air interface, at a first modulation rate; and
7 transmit a consolidated payload over the air interface, at a second
8 modulation rate, wherein the consolidated payload includes the multiple data
9 units.

1 31. The apparatus of claim 30, wherein the header includes an indication of the
2 second modulation rate that will be used to transmit the consolidated payload, and
3 wherein the header and the multiple data units form a portion of a single, self-
4 describing, protocol data unit.

1 32. The apparatus of claim 30, wherein the header includes information to
2 enable a receiver to determine when an end of the consolidated payload will occur.

1 33. The apparatus of claim 30, wherein the header includes information to
2 enable a receiver to determine when an end of each of the multiple data units will
3 occur.

1 34. The apparatus of claim 30, wherein the consolidated payload further
2 includes information that enables a receiver to determine when an end of each of the
3 multiple data units will occur.

1 35. The apparatus of claim 34, wherein the information includes multiple
2 delimiters which include a delimiter for each of the multiple data units, wherein the
3 delimiter for a data unit includes an indication of a length of the data unit, and
4 wherein the delimiter is to be transmitted before the data unit at the second
5 modulation rate.

1 36. The apparatus of claim 30, wherein the header is a physical device header,
2 and wherein at least some of the multiple data units are service data units that are
3 separately deliverable by a receiver.

1 37. The apparatus of claim 30, further comprising one or more antennae,
2 coupled to the physical device, which is operable to provide an interface between
3 the air interface and the physical device.

1 38. The apparatus of claim 30, further comprising an optical transmission
2 device, coupled to the physical device, which is operable to provide an interface
3 between the air interface and the physical device.

1 39. An apparatus comprising:
2 a medium access control device, to receive multiple data units from a
3 physical device; and
4 the physical device, coupled to the medium access control device, which is
5 operable to

6 receive a header over an air interface, at a first modulation rate; and
7 switch to a second modulation rate and receive a consolidated
8 payload, wherein the consolidated payload includes the multiple data units.

1 40. The apparatus of claim 39, wherein the header includes an indication of the
2 second modulation rate at which the consolidated payload is modulated, and
3 wherein the header and the multiple data units form a portion of a single, self-
4 describing, protocol data unit.

1 41. The apparatus of claim 39, wherein the header includes information
2 indicating when an end of at least one of the multiple data units will occur.

1 42. The apparatus of claim 39, wherein the consolidated payload further
2 includes information indicating when an end of at least one of the multiple data
3 units will occur.

1 43. The apparatus of claim 42, wherein the information includes multiple
2 delimiters which include a delimiter for at least one of the multiple data units,
3 wherein the delimiter for a data unit includes an indication of a length of the data
4 unit, and wherein the delimiter is to be received before the data unit at the second
5 modulation rate.

1 44. The apparatus of claim 43, wherein the delimiter further includes a
2 validation field, and wherein the physical device is further operable to:
3 determine whether the delimiter is valid using information in the validation
4 field; and
5 if the delimiter is not valid, evaluate at least one delimiter-sized data
6 segment received in the consolidated payload to attempt to find another possible
7 delimiter.

1 45. The apparatus of claim 39, wherein the header is a physical device header,
2 and at least some of the multiple data units are service data units that are separately
3 deliverable by a receiver.

1 46. The apparatus of claim 39, further comprising one or more antennae,
2 coupled to the physical device, which are operable to provide an interface between
3 the air interface and the physical device.

1 47. The apparatus of claim 39, further comprising an optical transmission
2 device, coupled to the physical device, which is operable to provide an interface
3 between the air interface and the physical device.

1 48. A computer-readable medium having program instructions stored thereon to
2 perform a method, which when executed within a wireless local area network
3 device, result in:

4 transmitting a header over an air interface, at a first modulation rate; and
5 transmitting a consolidated payload over the air interface, at a second
6 modulation rate, wherein the consolidated payload includes multiple data units.

1 49. The computer-readable medium of claim 48, wherein the header includes an
2 indication of the second modulation rate that will be used to transmit the
3 consolidated payload, and wherein the header and the multiple data units form a
4 portion of a single, self-describing, protocol data unit.

1 50. The computer-readable medium of claim 48, wherein the header includes
2 information that enables a receiver to determine when an end of at least one of the
3 multiple data units will occur.

1 51. The computer-readable medium of claim 48, wherein the consolidated
2 payload further includes information that enables a receiver to determine when an
3 end of at least one of the multiple data units will occur.

1 52. The computer-readable medium of claim 51, wherein the information
2 includes multiple delimiters which include a delimiter for at least one of the
3 multiple data units, wherein the delimiter for a data unit includes an indication of a
4 length of the data unit, and wherein the delimiter is transmitted before the data unit
5 at the second modulation rate.

1 53. The computer-readable medium of claim 48, wherein the header is a
2 physical device header, and wherein at least some of the multiple data units are
3 service data units that are separately deliverable by a receiver.

1 54. A computer-readable medium having program instructions stored thereon to
2 perform a method, which when executed within a wireless local area network
3 device, result in:
4 receiving a header over an air interface, at a first modulation rate; and
5 switching to a second modulation rate and receiving a consolidated payload,
6 wherein the consolidated payload includes multiple data units.

1 55. The computer-readable medium of claim 54, wherein the header includes an
2 indication of the second modulation rate at which the consolidated payload is
3 modulated, and wherein the header and the multiple data units form a portion of a
4 single, self-describing, protocol data unit.

1 56. The computer-readable medium of claim 54, wherein the header includes
2 information indicating when an end of at least one of the multiple data units will
3 occur.

1 57. The computer-readable medium of claim 54, wherein the consolidated
2 payload further includes information indicating when an end of at least one of the
3 multiple data units will occur.

1 58. The computer-readable medium of claim 57, wherein the information
2 includes multiple delimiters which include a delimiter for at least one of the
3 multiple data units, wherein the delimiter for a data unit includes an indication of a
4 length of the data unit, and wherein the delimiter is received before the data unit at
5 the second modulation rate.

1 59. The computer-readable medium of claim 58, wherein the delimiter further
2 includes a validation field, and executing the program instructions further results in:
3 determining whether the delimiter is valid using information in the
4 validation field; and
5 if the delimiter is not valid, evaluating at least one delimiter-sized data
6 segment received in the consolidated payload to attempt to find another possible
7 delimiter.

1 60. The computer-readable medium of claim 54, wherein the header is a
2 physical device header, and wherein at least some of the multiple data units are
3 service data units that are separately deliverable by a receiver.